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PRACTICE

10-MINUTE CONSULTATION

Poor adherence to antihypertensive drugs

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A 56 year old man has had persistently raised blood pressure readings at home and in clinic since his diagnosis of hypertension three years ago. He was diagnosed after ambulatory blood pressure monitoring, and is prescribed four antihypertensives. At a routine blood pressure review he says not to bother with another prescription because he doesn't take the drugs.

As many as half of patients with apparent resistant hypertension do not take their prescribed drugs.[1] Consider non-adherence in those taking antihypertensives with elevated blood pressure readings particularly in those with apparent resistant hypertension, where blood pressure is persistently ≥140/90 mm Hg despite taking ≥3 titrated antihypertensive drugs including a diuretic. Biological resistant hypertension affects around 10% of those treated for hypertension in the United Kingdom, and such patients need specialist management. Attempt to identify and manage poor adherence before referring the patient to a specialist.

What you should do

To find out about adherence to drugs ask patients questions such as: "I know many people have difficulty taking their medicines, how do you manage yours?" or "Take me through your medications."

The rate that patients are prescribed or collect their drugs can also provide information on adherence. In patients whose blood pressure remains uncontrolled despite multiple (≥3) antihypertensive drugs consider referral to a specialist hypertension clinic for directly observed therapy, where a patient is observed taking their drugs while having their blood pressure measured during and afterwards,[1] or toxicological analysis of urine.[2] Explore to what extent and why the patient is not taking the prescribed drugs. The table shows factors identified in observational studies that are associated with non-adherence and could provide a framework for discussion.[3] If the patient declines treatment you can explain: "I respect your decision not to take drugs for your blood pressure, but I would like to explore the reasons behind this decision so that I can support you in this choice."

What you should cover

Discuss risk

Hypertension is generally an asymptomatic condition and patients might not understand the clinical course of hypertension and the reduced risk of harmful consequences with lifestyle and medical therapies. The risk associated with increasing blood pressure is continuous. Each 2 mm Hg rise in systolic blood pressure is associated with a 7% increased risk of death from ischaemic heart disease, and a 10% increased risk of death from stroke for people aged 40-69 years.[4] Avoid using descriptive terms when explaining risks to patients. Use absolute numbers with visual aids and consistent denominators. For example, "In a population of 100 people aged 40-69, with every 2 mm Hg rise in blood pressure, 10 people are at risk of dying from a stroke and seven people are at a risk of dying from heart disease such as a heart attack."

To help patients understand what that means for them calculate their QRISK2 score (https://qrisk.org). For example, the QRISK for a 56 year old man with no other associated risks is 7.9% over 10 years. This can be explained by: "In a crowd of 100 people with the same risk factors as you, eight are likely to have a heart attack or a stroke in the next 10 years." Supplement this information by showing patients the visual representation of their estimated risk displayed on the QRISK website (fig 1⇓).

Discuss lifestyle

If "medication burden"—taking large numbers of drugs— is identified as a contributing factor to a patient's suboptimal adherence, then it might help to revisit lifestyle changes that help lower blood pressure with him or her. Talk about the blood pressure reductions that might be expected from different

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This is part of a series of occasional articles on common problems in primary care. *The BMJ* welcomes contributions from GPs.

What you need to know

- Non-adherence to antihypertensives and other drugs is common
- If you identify non-adherence, discuss risks of untreated hypertension, expected benefits of drugs that lower blood pressure, and lifestyle changes using the patient's personalised risk
- Negotiate an achievable goal with the patient

lifestyle modifications. A reduction in salt intake of 4.4 g/day on average reduces blood pressure by 5/3 mm Hg (systolic/diastolic).[5] Two medium slices of white bread, two rashers of bacon, a packet of crisps, and half a cupful of baked beans altogether contain 4.4 g of salt. A systematic review and meta-analysis showed that three to four sessions of 40 minutes of aerobic exercise at a moderate intensity, on average, lowers blood pressure by 5/3 mm Hg.[6 7] One randomised controlled trial showed that each pound (0.45 kg) of weight loss reduced blood pressure by about 1 mm Hg in overweight or obese people.[8] The DASH (dietary approaches to stop hypertension) diet is high in vegetables, fruits, low fat dairy products, whole grains, poultry, fish, and nuts and low in sweets, sugar sweetened beverages, and red meats.[9] One randomised controlled trial showed a 6/4 mm Hg reduction in blood pressure when the DASH diet was compared with a control diet that was typical of the diets of a substantial number of US citizens. Dealing with multiple lifestyle modifications simultaneously has been shown to be more effective than a sequential approach,[10] and may have a cumulative effect on blood pressure reduction.

Discuss medication

Determine how the patient is managing his or her drugs. Pay particular attention to the side effects of the drugs, the dosing frequency, and number of different drugs. A reduction in the number of drugs could be negotiated, aiming for a higher, more realistic blood pressure target. The expected blood pressure reductions achieved on drugs can be quoted on the basis of a meta-analysis of 147 randomised controlled trials.[11] It depends on the patient's pretreatment blood pressure and the number of drugs taken. For example, a patient with a pretreatment blood pressure of 178/98 mm Hg may expect reductions of 11.7/4.6 mm Hg, 22.2/11.0 mm Hg, and 31.7/15.6 mm Hg if treated with standard doses of one, two, or three antihypertensives, respectively.[11]

Consider simplifying the patient's drug regimen. Complicated dosing regimens are associated with lower adherence.[12] Fewer daily doses, monotherapy, and fewer changes in antihypertensives could be considered. A meta-analysis has shown that single pill combination drugs are associated with improved adherence and blood pressure control, and they could be used where patients are prescribed multiple antihypertensive drugs.[13]

Set a goal

Empowering patients to monitor their blood pressure at home and to manage their drugs improves blood pressure control.[14] Consider motivational interviewing, which has been shown to improve adherence to antihypertensives and blood pressure control.[15] This involves getting patients to explore why and how they can change their behaviours. The healthcare provider's role is to guide patients through setting the agenda for change by eliciting their internal motivation to change:

- **Ask** open ended questions so patients can consider how and why they might change
- **Listen** to patients' accounts and express empathy
- **Inform** by asking permission to provide information

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Useful reading

For patients

American Heart Association. Resistant hypertension. www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/Resistant-Hypertension_UCM_469327_Article.jsp

For health professionals

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QRISK. QRISK2 calculator. https//qrisk.org

Education into practice

- Do you explore adherence in patients with apparently poorly controlled hypertension?

How patients were involved in the creation of this article

No patients were involved in the creation of this article

Table

Table Table| Factors contributing to non-adherence in hypertension with possible solutions. Adapted from WHO report on adherence to long term therapies[3]

Factors	Possible solutions
Socioeconomic	
Poor socioeconomic status Illiteracy Unemployment Limited drug supply Cost of drugs	Make patients aware of support from governmental and voluntary agencies such as the Citizens Advice Bureau in the UK Issue repeat prescriptions to cover a longer duration—such as three months
Healthcare system	
Clinician-patient relationship Lack of knowledge and training for healthcare providers Inadequate time for consultation	Book longer appointments Training of healthcare assistants, nurses, doctors, and pharmacists to discuss adherence
Condition	
Lack of symptoms Chronic or incurable disease No immediate consequences of stopping the drugs	Education through written and verbal information—shared decision making Patient support groups Peer support and education
Treatment	
Complex treatment regimens Duration of treatment Low drug tolerability and adverse effects of treatment such as dry cough with angiotensin converting enzyme inhibitors inhibitors, ankle swelling with calcium channel blockers, and electrolyte disturbances and gout with diuretics	Simplify the regimen and minimise side effects through use of monotherapy, single pill combination drugs, lower doses to prevent side effects, slow release formulations to reduce dose frequency, trying other drugs in the same class or changing the class
Patient	
Patient's knowledge of the disease Patient's perception of risk and awareness of costs and benefits of treatment Non-acceptance of monitoring Psychiatric illness	Patient education through written and verbal information Motivational interviewing Promoting self care through home monitoring Using smart phone applications to set medication reminders and record their home blood pressure, which could be shared electronically with their doctor

Figure

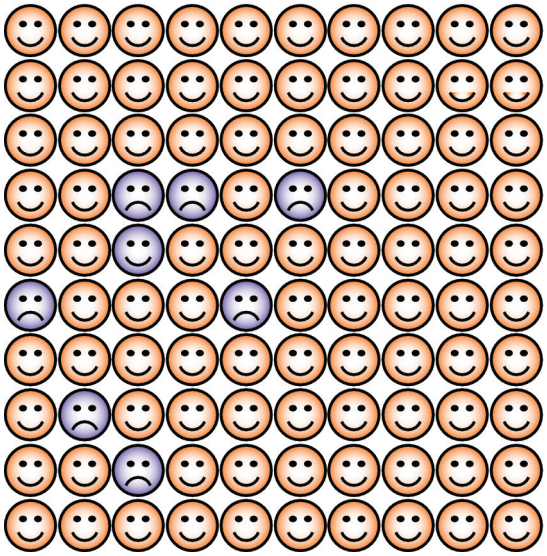

Fig 1 QRISK2 score